SANTA CRUZ BIOTECHNOLOGY, INC.

20S Proteasome β2 (MCP165): sc-58410

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The Power to Question

BACKGROUND

The proteasome represents a large protein complex that exists inside all eukaryotes and archaea, and in some bacteria. The main function of proteasomes is to degrade unnecessary or damaged proteins by proteolysis. The most common form of the proteasome, known as the 26S Proteasome, contains one 20S Proteasome core particle structure and two 19S regulatory caps. The 20S Proteasome core is hollow and forms an enclosed cavity, where proteins are degraded, as well as openings at the two ends to allow the target protein to enter. The 20S Proteasome core particle contains many subunits, depending on the organism. All of the subunits fall into one of two types: α subunits, which are structural, serve as docking domains for the regulatory particles and exterior gates blocking unregulated access to the interior cavity; or β subunits, which are predominantly catalytic. The outer two rings in the proteasome consist of seven α subunits each, and the inner two rings each consist of seven β subunits.

REFERENCES

1. Kristensen, P., et al. 1994. Human proteasome subunits from two-dimensional gels identified by partial sequencing. Biochem. Biophys. Res. Commun. 205: 1785-1789.
2. Morimoto, Y., et al. 1995. Ordered structure of the crystallized bovine 20S Proteasome. J. Biochem. 117: 471-474.

CHROMOSOMAL LOCATION

Genetic locus: PSMB2 (human) mapping to 1p34.3; Psmb2 (mouse) mapping to 4 D2.2.

SOURCE

20S Proteasome β2 (MCP165) is a mouse monoclonal antibody raised against modified erythrocyte-derived proteasomes of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 50% glycerol.

APPLICATIONS

20S Proteasome β2 (MCP165) is recommended for detection of 20S Proteasome β2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for 20S Proteasome β2 siRNA (h): sc-62866, 20S Proteasome β2 siRNA (m): sc-62867, 20S Proteasome β2 shRNA Plasmid (h): sc-62866-SH, 20S Proteasome β2 shRNA Plasmid (m): sc-62867-SH, 20S Proteasome β2 shRNA (h) Lentiviral Particles: sc-62866-V and 20S Proteasome β2 shRNA (m) Lentiviral Particles: sc-62867-V.

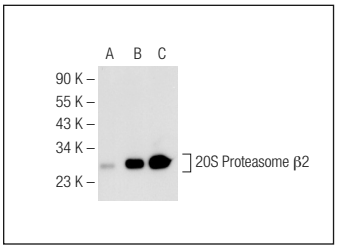
Molecular Weight: 23 kDa.

Positive Controls: 20S Proteasome β2 (h2): 293T Lysate: sc-175561 or HeLa whole cell lysate: sc-2200.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



20S Proteasome β2 (MCP165): sc-58410. Western blot analysis of 20S Proteasome β2 expression in non-transfected 293T: sc-117752 (**A**), human 20S Proteasome β2 transfected 293T: sc-175561 (**B**) and HeLa (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Thaker, N.G., et al. 2009. Identification of survival genes in human glioblastoma cells by small interfering RNA screening. Mol. Pharmacol. 76: 1246-1255.
2. Schaedler, S., et al. 2010. Hepatitis B virus induces expression of antioxidant response element-regulated genes by activation of Nrf2. J. Biol. Chem. 285: 41074-41086.
3. Zhang, M., et al. 2011. Proteome alterations of cortex and hippocampus tissues in mice subjected to vitamin A depletion. J. Nutr. Biochem. 22: 1003-1008.
4. Chakraborty, J., et al. 2015. Quercetin improves the activity of the ubiquitin-proteasomal system in 150Q mutated huntingtin-expressing cells but exerts detrimental effects on neuronal survivability. J. Neurosci. Res. 93: 1581-1591.
5. Riaz, M., et al. 2016. PABPN1-dependent mRNA processing induces muscle wasting. PLoS Genet. 12: e1006031.
6. Wolf-Levy, H., et al. 2018. Revealing the cellular degradome by mass spectrometry analysis of proteasome-cleaved peptides. Nat. Biotechnol. E-published.
7. Ryzhikov, M., et al. 2019. Diurnal rhythms spatially and temporally organize autophagy. Cell Rep. 26: 1880-1892.e6.
8. Sabath, N., et al. 2020. Cellular proteostasis decline in human senescence. Proc. Natl. Acad. Sci. USA 117: 31902-31913.
9. Hinze, L., et al. 2022. Supramolecular assembly of GSK3α as a cellular response to amino acid starvation. Mol. Cell 82: 2858-2870.e8.
10. Wang, T., et al. 2022. Novel compound C150 inhibits pancreatic cancer through induction of ER stress and proteosome assembly. Front. Oncol. 12: 870473.

RESEARCH USE

For research use only, not for use in diagnostic procedures.